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10/555,270	11/01/2005	Marc Lambertus Vlemmings	NL 030453	5108

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EXAMINER

AKINYEMI, AJIBOLA A

ART UNIT	PAPER NUMBER
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2618

NOTIFICATION DATE	DELIVERY MODE
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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No. 10/555,270	Applicant(s) VLEMMINGS, MARC LAMBERTUS	
	Examiner AJIBOLA AKINYEMI	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09/28/2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 13-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 13-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 3, 4, 8 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Regarding independent claims 1, 3, 4 and 8, the specification does not disclose $(N+1)/N$ or $(N-1)/N$ as claimed in the amended claim, Instead specification disclose $(N/(N+1))$ or $(N/(N-1))$. Examiner used the broadest reasonable interpretation for rejection on all these claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1, 8, 13, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shen (Pub. No.: US 2004/0116087A1) and further in view of Bradly (Patent No.: US 6087865).

With respect to claim 1, 8:

Shen discloses a receiver for receiving a radio frequency signal having a center frequency that is comprised in one of at least two frequency bands, the receiver comprising; oscillating means (**fig.3, item 87**) for generating a first mixing signal (**fig.3, input to item 81 from item 87**) having a first frequency; a frequency divider (**fig.3, item 89**) arranged to derive a second mixing signal (**fig.3, input to item 85 from item 89**) from the first mixing signal; a first mixer (**fig.3, item 81**) arranged to down-convert the radio frequency signal (**fig.3, item 73**) to a first lower frequency signal (**fig.3, output of item 81**) using the first mixing signal (**fig.3, item 81**); and a second mixer (**fig.3, item 85**) arranged to down-convert the first low frequency signal to a second lower frequency signal (**fig.3, output of item 85**) using the second mixing signal (**fig.3, item 85**). Shen

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did not disclose that a division factor of the frequency divider and a ratio between the center frequency and the first frequency are determined by one of the at least two frequency band wherein the ratio between the center frequency and a frequency of the first mixing signal is equal to $(N+1)/N$ or $(N-1)/N$ where N is a division factor. Bradly discloses this limitation (col.4, lines 5-19 which discloses frequency synthesizer 203 processes the signal to provide a signal to the mixer 201 having a frequency of $F_{sub.S}$ selectably set to $F_{sub.IN} (N+1)/N$ or $F_{sub.IN} (N-1)/N$). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the above limitation so as to consume less circuit board space and power (col. 1, lines 10-16)

With respect to claim 13, 16:

Shen discloses a transceiver wherein frequencies of the first mixing signal and second mixing signal are not fixed and are variably dependent on the center frequency of the radio frequency signal (Shen discloses intermediate frequency to be variable, center frequency is also variable with the local oscillator; parag.0019).

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shen (Pub. No.: US 2004/0116087A1) and further in view of Bradly (Patent No.: US 6087865) and Durec (Patent No.: US 6144846).

With respect to claim 2:

The rejection of claim 1 is incorporated; Shen, Bradly did not disclose phase shifter for shifting the phase of the second mixing signal. Durec discloses phase shifter (fig.1, item 30). It would have been obvious to one of ordinary skill in the art at the time the

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invention was made to have a phase shifter in order to shift the phase of an input signal on the basis of the phase shift characteristics of the circuit and output the resultant signal.

7. Claims 3-6, are rejected under 35 U.S.C. 103(a) as being unpatentable over Baltus (Patent No.: US 6282413B1) and further in view of Bradly (Patent No.: US 6087865).

With respect to claim 3:

Baltus discloses a transmitter (**fig. 8, 9**) for transmitting a radio frequency signal having a center frequency that is comprised in one of at least two frequency bands, the transmitter comprising oscillating means (**fig.8, item 42**) for generating a second mixing signal having a second frequency; frequency divider (**fig.8, item 40, 41**) arranged to derive a first mixing signal from the second mixing signal ; a first mixer (**fig.8, item 44**) arranged to up-convert a lower frequency signal to a higher frequency signal using the first mixing signal ; and second mixer (**fig.8, item, 43**) arranged to up-convert the higher frequency signal to a radio frequency signal using the first second signal. Baltus did not disclose that a division factor of the frequency divider and a ratio between the center frequency and the first frequency are determined by one of the at least two frequency band wherein the ratio between the center frequency and a frequency of the first mixing signal is equal to $(N+1)/N$ or $(N-1)/N$ where N is a division factor.

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Bradly discloses this limitation (**col.4**, lines 5-19 which discloses frequency synthesizer 203 processes the signal to provide a signal to the mixer 201 having a frequency of $F_{sub.S}$ selectably set to $F_{sub.IN} (N+1)/N$ or $F_{sub.IN} (N-1)/N$). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the above limitation so as to consume less circuit board space and power (col. 1, lines 10-16)

With respect to claim 4:

Baltus discloses a transceiver comprising a receiver (**Fig.2**) that is capable of receiving a radio frequency signal (**fig.2, fA**) having a center frequency that is comprised in one of at least two frequency bands, the receiver comprising oscillating means (**fig.2, item 10**) for generating a first mixing signal having a first frequency; a frequency divider (**fig.2, item 8**) arranged to derive a second mixing signal from the first mixing signal; a first mixer (**fig.2, item 7-1IQ**) arranged to down-convert the radio frequency signal (**fig.2, fA**) to a first lower frequency signal using the first mixing signal (**fig.2, item 7-1IQ**) and a second mixer (**fig. 2, item 7-2**) arranged to down-convert the first low frequency signal to a second lower frequency signal using the second mixing signal (**fig.2, item 7-2**).

Baltus did not disclose that a division factor of the frequency divider and a ratio between the center frequency and the first frequency are determined by one of the at least two frequency band wherein the ratio between the center frequency and a frequency of the first mixing signal is equal to $(N+1)/N$ or $(N-1)/N$ where N is a division factor. Bradly discloses this limitation (col.4, lines 5-19 which discloses frequency synthesizer 203

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processes the signal to provide a signal to the mixer 201 having a frequency of $F_{sub.S}$ selectably set to $F_{sub.IN} (N+1)/N$ or $F_{sub.IN} (N-1)/N$. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the above limitation in order to consume less circuit board space and power.

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With respect to claim 5:

Baltus discloses a transceiver comprising a transmitter (**fig. 8, 9**) that is capable of transmitting a second radio frequency signal having a second center frequency that is comprised in one of the at least two frequency bands, the transmitter comprising: a third mixer (**fig. 8, item 44**) arranged to up-convert a lower frequency signal to a higher frequency signal using a third mixing signal (**fig.8, input to item 44**) having a third frequency; and a fourth mixer (**fig.8, item 43**) arranged to up-convert the higher frequency signal to the radio frequency signal (**fig.8, output of item 43**) using a fourth mixing signal (**fig.8, input to item 43**).

With respect to claim 6:

Baltus discloses a transceiver (**fig.3**) wherein the oscillating means (**fig.8, item 42**) are further arranged to generate the fourth mixing signal (**fig.8, item output of item 43**) having a third frequency and the transceiver further comprises a second frequency divider (**fig.8, items 40, 41**) for deriving the third mixing signal from the fourth mixing signal (**fig.8**). Baltus did not disclose that a division factor of the frequency divider and a ratio between the center frequency and the first frequency are determined by one of the at least two frequency band. Bradly discloses this limitation (**col.4, lines 5-19**). It would

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have been obvious to one of ordinary skill in the art at the time the invention was made to have the above limitation in order to consume less circuit board space and power (col. 1, lines 10-16).

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baltus (Patent No.: US 6282413B1) and further in view of Bradly (Patent No.: US 6087865) and Darabi (Pub. No.: US 20060205374 A1).

With respect to claim 7:

The rejection of claim 4 is incorporated; Baltus, Bradly do not explicitly disclose a transceiver wherein the first mixing signal is equal the third signal and the second is equal the fourth signal. Darabi discloses this limitation (fig.3, item 55 and 59 represent the in-phase signal I as disclose in parag.0097). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the above limitation in order to achieve robust performance over process variation and interference.

9. Claims 14, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baltus (Patent No.: US 6282413B1) and further in view of Bradly (Patent No.: US 6087865) and Shen (Pub. No.: US 2004/0116087A1).

With respect to claim 14, 15:

The rejection of claims 3 and 4 are incorporated; Baltus and Bradly do not disclose a transceiver wherein frequencies of the first mixing signal and second mixing signal are not fixed and are variably dependent on the center frequency of the radio frequency

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signal. Shen discloses this limitation (Shen discloses intermediate frequency to be variable, center frequency is also variable with the local oscillator; parag.0019). It would have been obvious to one in ordinary skill in the art at the time the invention was made to have the above limitation in order to allow for significant cost savings, board area savings, and power savings.

Response to Arguments

10. Applicant's arguments filed 09/28/2010 have been fully considered but they are not persuasive. Regarding independent claims 1, 3, 4 and 8, the specification does not disclose $(N+1)/N$ or $(N-1)/N$ as claimed in the amended claim, Instead specification disclose $(N/(N+1))$ or $(N/(N-1))$ which is not the same as $(N+1)/N$ or $(N-1)/N$. Examiner used the broadest reasonable interpretation for rejection on all these claims.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AJIBOLA AKINYEMI whose telephone number is (571)270-1846. The examiner can normally be reached on monday- friday (8.30-5pm) Est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, YUWEN PAN can be reached on (571) 272-7855. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. A./

Examiner, Art Unit 2618

/Duc Nguyen/

Supervisory Patent Examiner, Art Unit 2618